Claims

We Claim:

1. A method for communicating data between terminals in heterogeneous communications network, comprising:

broadcasting periodically a first beacon in a first signal format, the first beacon defining a start of a contention period and a start of a contention free period, the contention free period for communicating data between the terminals; and

broadcasting a second beacon in a second signal format during the contention free period, the second beacon defining the start of the contention period and the start of the contention free period.

2. The method of claim 1, in which the contention free period includes assigned and unassigned slots, and in which the second beacon is broadcast during time periods of unassigned slots.

3. The method of claim 1, further comprising:

broadcasting a plurality of second beacons in a plurality of different signal formats during the contention free period.

4. The method of claim 1, in which the first signal format is predetermined.

5. The method of claim 1, in which the first signal format is based on a priority of terminals in the heterogeneous network.

6. The method of claim 1, in which the first signal format is based on a bandwidth of terminals in the heterogeneous network.

7. The method of claim 2, in which the slots are assigned according to a bandwidth of terminals in the heterogeneous network.

8. The method of claim 2, in which the slots are assigned according to a priority of terminals in the heterogeneous network.

9. The method of claim 1, in which terminals of the heterogeneous network share a single frequency band.

10. A heterogeneous communication network, comprising:

a first terminal communicating according to a first signal format;

a second terminal communicating according to a second signal format;

a coordinator configured to broadcast periodically a first beacon in the first signal format, the first beacon defining a start of a contention period and a start of a contention free period, and configured to broadcast a second beacon in the second signal format during the contention free period, the second beacon defining the start of the contention period and the start of the contention free period.

11. The network of claim 10, in which the coordinator can communicate with any terminal in the network in any predetermined signal format.

12. The network of claim 10, in which the first and second terminal communicate indirectly with each other via the coordinator terminals.